

# ANNUAL REPORT

## Lane County Integrated Vegetation Management Program 2022

*Prepared for:*

**LANE COUNTY BOARD OF HEALTH**

*Prepared by:*

**Lane County Department of Public Works  
Road Maintenance Division  
3040 N. Delta Highway  
Eugene, OR. 97408-1696**

Melanie O'Hara  
Natural Resource Specialist

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*Lane County Department of Public Works has prepared this annual report to comply with the requirements of Lane Code 15.530*

## I. Integrated Vegetation Management

Lane County Road Maintenance Division responsibilities include vegetation maintenance along our 1400 miles of county roadways, including nearly 80 miles of guardrails, spanning from the Pacific Coast to the Cascade Mountains. The Lane County Integrated Vegetation Management Program (IVMP) uses an adaptive management approach to vegetation control within the County road rights-of-way (ROW). Primary goals of the program are to ensure the safety of road users, including motorists, cyclists and pedestrians, as well as the protection of public infrastructure and the promotion of environmental stewardship through appropriate vegetation control methods. Lane County utilizes five control methods within the IVMP:

- Manual Controls
  - maintenance includes hand pulling and grubbing of small, outlier or new infestations with the proper disposal of noxious weeds to prevent further spread
- Mechanical Controls
  - maintenance includes mowing, brushing, weed eating, tree trimming and chippers for safety clearances and increased visibility
- Biological Controls
  - involves the release of approved insects and pathogens that target specific noxious weed species to aid in population control
- Cultural Controls
  - involves the use of native and preferred species mixes to assist in out-competing unwanted vegetation
- Chemical Controls
  - includes the use of herbicide applications performed by licensed applicators according to state and federal requirements, while strictly adhering to product label guidelines and specifications for target species;
  - includes the use of backpack sprayers for smaller localized infestations and use of a spray truck with a hand held nozzle for roadside guardrails

In October 2016, the Board of County Commissioners adopted Ordinance 16-07, the Roadside Integrated Vegetation Management Policy (RIVMP), which can be found in Lane Code Chapter 15.500. This policy was developed from consensus-based recommendations of the Vegetation Management Task Force for limited, data-driven herbicide use within our Lane County road rights-of-way. Per the new ordinance, mechanical and manual control methods continue to be the primary tools used within the Integrated Vegetation Management Program. All herbicide applications focus on the maintenance of overgrown guardrails, site specific noxious weed control, and direct stump applications for “stump-sprouting” tree species. All herbicide products used within these high priority areas derive from a Permitted Product List, reviewed and approved by the Board of Health for use by the Department of Public Works Road Maintenance Division. The approved products meet specific criteria in accordance with Lane Code 15.511(5). These important steps help highlight Lane County Public Works’ commitment to using vegetation control methods that promote environmental health and public safety.

Three herbicide products have been annually reviewed by the Public Health Advisory Committee and approved by the Board of Health for targeted control of roadside vegetation in accordance with the RIVMP within Lane County rights-of-way:

- Vastlan – active ingredient triclopyr
- Milestone – active ingredient aminopyralid
- Ecomazapyr 2SL – active ingredient imazapyr

Table 1 displays the concentrations and quantities of herbicide product applied to County roadways for roadside vegetation management during the reporting period January 1, 2022 to December 31, 2022. Due to difficulties experienced in staff hiring and retention, the herbicide component of the 2022 Lane County IVMP was never implemented. Typically, these applications would focus on target species under specific conditions for each approved product - the use of Vastlan for overgrown guardrail maintenance, Milestone for control of the knapweed species complex, and Ecomazapyr 2SL for control measures associated with the knotweed species complex and puncturevine.

**Table 1 - 2022 Herbicide use by treatment type & rate per acre**

Product used	Active Ingredient	Concentration/Rate per acre	Treatment type	Amount used per treatment type	Total used
Milestone	aminopyralid	@5oz/ac	Noxious weed	---	---
Ecomazapyr 2SL	imazapyr	@64oz/ac	Noxious weed	0.00oz	0.00oz
Vastlan	triclopyr	@64oz/ac	Noxious weed	0.00oz	0.00oz
		@64oz/ac	Guardrails	0.00oz*	
<b>Total</b>	<b>*0.00 gallons of product used over 0.00 miles of guardrails</b>				<b>0.00 oz. = 0.00 gallons</b>

Table 2, on page 4, further breaks down the total herbicide product used into monthly totals by concentration, treatment type and whether used for noxious weed control or guardrail maintenance. Due to the limited nature of qualifying stump-sprouting tree species, not all trees removed from the ROW are candidates for herbicide stump treatments. As a reminder, the 2020 and 2021 herbicide programs were also impacted by both the COVID-19 pandemic and the Holiday Farm Fire, reducing total herbicide treatment applications.

Table 2 -- Herbicide use by month &amp; treatment type

Month	2020	Amount used 2021	2022	Product name	Treatment type
<i>Rates are based on label specifications for use on targeted species within the ROW</i>					
May	--	--	--	Ecomazapyr 2SL	Noxious weed
June	--	--	--	Milestone	Noxious weed
	0.43oz	--	--	Ecomazapyr 2SL	Noxious weed
	--	--	--	Vastlan	guardrail
July	--	--	--	Milestone	Noxious weed
	2.27oz	--	--	Ecomazapyr 2SL	Noxious weed
	479.34oz	--	--	Vastlan	guardrails
August	2.97oz	--	--	Ecomazapyr 2SL	Noxious weed
	355.72oz	--	--	Vastlan	guardrails
September	--	--	--	Ecomazapyr 2SL	Rails + Noxious weed
	--	--	--	Vastlan	Rails + Noxious weed
October	--	--	--	Ecomazapyr 2SL	Noxious weed
	--	--	--	Vastlan	guardrails
Total	840.74 oz. = 6.57 gallons	0.00oz	0.00oz		

## II. Proposed Non-Listed Herbicide Use

No non-listed herbicides are proposed for use during the 2023 reporting period. During the upcoming reporting period, use of any non-listed herbicide products would only occur by specific authorization from the Board of Health after the Director of Public Works has determined that a specific condition or emergency exists warranting its use in accordance with Lane Code 15.510(3)(c,d).

## III. Proposed Herbicide Use

Proposed herbicide uses for the 2023 reporting period will be in accordance with the Lane County Right-of-Way Management Prescription Plan, limiting uses to priority noxious and invasive plant control, management of overgrown guardrail vegetation and any necessary stump treatments within the right-of-way. Guardrail maintenance, typically the control of aggressive growth and encroachment into the roadway of Himalayan blackberries, proves to be the number one issue in vegetation control faced by the Road Maintenance Division. Control efforts are anticipated to show an initial increase of guardrail treatments over the early years

of the program before seeing an annual decline in needed treatments as increased vegetation control is achieved through improved management associated with herbicide use. Proposed noxious and invasive weed control will focus on areas defined through working partnerships and priority species control such as the knapweed and knotweed complexes found within Lane County rights-of-way.

#### IV. Cost of Herbicide Application

Lane County Department of Public Works has incurred costs stemming from labor, equipment and product use associated with the herbicide portion of the Integrated Vegetation Management Program. These costs include tasks related to the herbicide applications themselves, as well as all efforts in road sign placement and removal for advance public notice.

Table 3, breaks down cost descriptions into:

- personnel costs - including labor and benefits for individual staff
- operation overhead - including costs per employee to run Lane County herbicide program operations
- additional equipment costs - including hardware and supplies, vehicle use and fuels

**Table 3 - 2022 Total costs associated with herbicide program**

Herbicide Application Type	Personnel Costs	Operation Overhead	Equipment Costs	Totals	Labor Hours	Cost per Hour
Guardrail	\$0.00	\$0.00	\$436.76	\$0.00	0	
Noxious Weed	\$0.00	\$0.00	\$0.00	\$0.00	0	
Applicator license costs			\$1210.00	\$1210.00		
Herbicide product			\$0.00	\$0.00		
<b>Totals</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$1646.76</b>	<b>\$2370.00</b>	<b>0</b>	<b>\$0.00</b>

Costs associated with the actual amount of herbicide product applied have been tallied separately and displayed in Table 4, found on page 6. These costs have been broken down into dollar amounts per ounce of product used and the total costs associated with each product.

**Table 4 - 2022 Cost per ounce of herbicide product used**

Product	Cost per Ounce (oz)	Ounces Used (oz)	Total Cost
Vastlan	--	0.0	\$0.00
Ecomazapyr	--	0.0	\$0.00
Milestone	--	0.0	\$0.00
<b>Total</b>		<b>0.0 oz.</b>	<b>\$0.00</b>

## V. Non-herbicide Control Methods

The majority of non-herbicide vegetation management accomplishments that occurred throughout the 2022 reporting period were comprised of routine roadside vegetation maintenance activities such as mechanical mowing and brushing activities. Table 5 provides the major mechanical control methods utilized and the roadside mile accomplishments associated with each.

**Table 5 - 2022 Non-herbicide routine maintenance activities**

Routine Maintenance Activities	Roadside Miles
Mechanical Brushing	625
Safety Strip Mowing	2416
Full Width Mowing	2418
Top-trimming Activities	54

In recent years, several alternative management techniques and methods outside the scope of routine vegetation maintenance have been explored by the Lane County Road Maintenance Division with varied results. These included excavation projects (noxious weed vegetation/soil removal and disposal), Waipuna hot foam applications, textile fabrics and even an attempt at seed bank removal by vacuuming. The overall success of control methods were ultimately driven by scale, with large scale control projects proving costly and logistically ineffective, while some methods just simply did not work.

Small scale methods utilizing manual controls, grubbing and textile fabrics proved feasible but were dependent on project logistics and targeted species present. Lane County continues to monitor and review the long term effectiveness of past projects while remaining knowledgeable on current control methods through ongoing educational opportunities. Table 6, on page 7, provides an overview of both successful and unsuccessful non-herbicide control methods utilized by the IVMP.

Table 6 -- Projects in review

Non-herbicide Control Methods	
<b><u>Successful</u></b>	
Seeding Projects	<ul style="list-style-type: none"> <li>• Use of native and preferred seed types following shoulder construction and restoration, culvert installations</li> </ul>
Public Outreach & Education	<ul style="list-style-type: none"> <li>• Website expansion and development</li> <li>• Partnerships for noxious weed control and management</li> <li>• Staff training and education</li> </ul>
Management Alternatives	<ul style="list-style-type: none"> <li>• Small scale, limited use alternative control methods -- manual control, use of textile fabrics</li> </ul>
<b><u>Unsuccessful</u></b>	
Exclusive Mechanical/Manual Controls	<ul style="list-style-type: none"> <li>• Long-term, large-scale use for control of specific noxious weed species such as knapweed complex, knotweed complex, blackberry and false brome proved ineffective in halting their spread during county herbicide moratorium</li> <li>• Necessary mowing frequencies and timings in hot spot areas are difficult to achieve at a county-wide scale</li> <li>• Many species will still set flower/seed even with repeated mowing</li> </ul>
Management Alternatives	<ul style="list-style-type: none"> <li>• Large scale textile fabric control</li> <li>• Large scale excavation and disposal</li> <li>• Mulching for noxious weed control</li> <li>• Seed bank vacuuming</li> </ul>

Because herbicide use is only one small part of the IVMP, focus remains on the promotion of vegetation management practices that emphasize safeguards to reduce impacts to public health and the environment; all with the expectation of providing an overall reduction in future maintenance activities. Through the integration of elements developed from continued monitoring and educational efforts, these goals can be achieved with appropriate management objectives, prevention measures and treatment thresholds.

## VI. Planned Non-herbicide Control Methods

For the upcoming reporting period of 2023, Lane County Department of Public Works will continue to utilize mechanical tools as the primary method to manage roadside vegetation concerns. The County will continue to investigate new tools that become available over the next twelve month period and continue with testing and evaluation of other non-herbicide



control methods as they become available. Prioritization of management needs will determine what projects occur over the next 12 month reporting period.

**Planned Routine Non-Herbicide Control Methods:**

- **Mechanical Control:** This involves using brush mowers, grass mowers and the aerial lift truck to manage roadside vegetation, including noxious weed management and roadside tree care/management.
- **Manual Control:** This involves using County crews to manage roadside vegetation using manual tools and methods and includes small weed site management, Threatened and Endangered plant site preservation and other roadside vegetation management needs.
- **Seeding:** Lane County Public Works has continued to experiment with seeding efforts to minimize weed infestations and restore project areas after construction projects. The efforts to establish preferred community types will continue over the coming annual reporting period.
- **Plantings and Restoration:** Lane County Public Works continues to plant and restore project areas after construction and large culvert installments. These efforts will continue over the coming annual reporting period.
- **Training and Education:** Lane County Public Works continues to utilize training and educational opportunities for staff members that work under the Integrated Vegetation Management program. These efforts will continue over the coming annual reporting period.
- **Biological Control:** This method employs biological control agents to manage weed populations that have established in areas within Lane County rights-of-way. There have been no new releases for several years but new agents are up for release on some high priority noxious weed species in the near future. Periodic monitoring of past agent releases (as it may take 10-20 years for a biocontrol agent to show control at a regional scale) and continuing education on future biocontrol opportunities will continue over the next annual reporting period.
- **Education & Public Outreach:** Lane County is working to improve and continue forward with efforts involving public education and outreach. We are developing strategies to educate the public about the County's worst weed invaders and develop projects to assist in management of these plant species County wide. These efforts include the development and expansion of the website as a public resource and to increase transparency through public notices and access to herbicide application data.

- **Partnerships:** Lane County Public Works has maintained both large and small partnerships over the years to assist in our County wide management efforts. These efforts will continue to develop and expand over the coming annual reporting period.

## VII. Program Elements

Although there has been no further testing of non-herbicide control methods during 2022, County staff keeps up to date on current Best Management Practices (BMPs) and species specific control methods for noxious weed management. Continued efforts focus on expanding species monitoring and the enhancement of resources such as our GIS database to meet Vegetation Task Force recommendations. Opportunities for partnerships and outreach endeavors in weed management are regularly explored to assist in the prioritization of County control efforts for mutually beneficial outcomes. This includes providing publicly accessible data to improve transparency by providing accurate information for interested residents through our website. To further increase public service, county staff has focused continuing education efforts on relevant issues based on concerns raised through public feedback, including important topics such as pollinator protection measures. With these inputs, the County continues to utilize the adaptive management approach inherent to the IVMP by making changes that consistently better County practices.

As described in Table 7, found on page 10, the IVMP has implemented several programs and strategies that facilitate accuracy and accountability, benefiting both county staff and the public. The continuation of the No Spray Area Program provides residents on County roadways with a voice in proposed herbicide applications adjacent to their property. By reaching out annually to County school districts, this same option has been given to parents of Lane County school bus riders to provide buffers to their children's bus stop from any adjacent herbicide applications.

No Spray Areas are based on individual taxlots, must be submitted by the parcel owner and apply only to Lane County roadways. No road signs are necessary as all No Spray Area enrolled parcels are mapped and locations readily available to road crews through our GPS enabled mobile devices. Data collection is facilitated through real time uploads and offline syncing, providing accurate reflections of treatments and species inventories to publicly accessible mapped databases. The IVMP website is still a work in progress, but currently provides the public with access to posted notices for proposed treatment areas and monthly reports detailing previous applications.

The No Spray Area Program renews on a three year cycle, with 2021 being the most recent. Program staff mail renewal reminders and applications to all current program participants requesting they renew their application at that time. An online enrollment/renewal application is also available on the IVMP website, including information regarding bus stop enrollment into the program.

**Table 7 -- Continued implementation of IVMP projects**

2022 Continued Implementations	
Survey & Inventory	<ul style="list-style-type: none"> <li>County wide GIS mapping of noxious weed and protected species at 3 year intervals</li> <li>Partnerships with agencies and local non-profits</li> </ul>
Public Outreach & Education	<ul style="list-style-type: none"> <li>Website expansion and development</li> <li>Increase in transparency -- public notices and herbicide spray reports</li> <li>No Spray Area Program for County school bus stops and ROWs of adjacent homeowner parcels</li> <li>Public input and feedback</li> </ul>

In order to provide continued support for County noxious weed management efforts, Lane County Public Works is currently exploring potential options for reproducing efforts at the County level associated with the Oregon Department of Transportation's (ODOT) Adopt-a-Highway program component focusing on noxious weed removal within the right-of-way. There has been strong public feedback concerning management and maintenance by local residents of vegetation behind guardrails to avoid scheduled County herbicide treatments in various locations. The legality and logistics behind such a program are currently in the early stages of exploration and holds the hope that this may be an avenue for public outreach and participation in future control measures.

Roadside noxious weed inventories were included in the Vegetation Management Task Force recommendations and written into the IVMP requirements to be conducted every three years. During the 2019 reporting period, presence/absence surveys based on priority weed densities were performed along County road rights-of-way during July and August to assist in complementing and expanding the County noxious weed database for support in future management decisions. The next inventory for noxious weed locations and densities was scheduled to occur in the spring/summer of 2022. Due to the overall difficulties and uncertainties associated with the COVID-19 pandemic, especially those regarding hiring and staff retention, the Roads Division has made the decision to postpone the surveys until the spring/summer of 2024.

Lane County is regularly exploring opportunities for cooperative efforts in noxious weed management.

- Lane County is exploring options for partnerships with like-minded entities to assist in building awareness and limiting the spread through the movement of farm equipment of the Early Detection/Rapid Response (EDRR) species, puncturevine. Unfortunately during 2022, staffing related impacts continued to hamper cooperative efforts, delaying progress for the near future.

- Efforts associated with federal, city and county natural areas and non-profit partners are being addressed to develop management plans, control measures and best management practices that will assist in limiting the spread of noxious weeds into adjacent natural areas.
  - Lane County partnered with the McKenzie River Trust in facilitating knapweed treatments within the right-of-way adjacent to their large scale restoration efforts of the Coyote-Spencer Wetlands on Crow Road
  - Lane County partnered with the Pure Water Partners, including EWEB and the McKenzie River trust, in facilitating Early Detection Rapid Response (EDRR) noxious weed control treatments within the rights-of-way adjacent to participating parcels located within the Holiday Farm Fire burn area.

To help furnish an understanding of the limited nature of the RIVMP's herbicide program, Table 8 provides a breakdown of the total number of herbicide applications by treatment type in relation to the overall system counts. As mentioned previously in this report, herbicide use within Lane County rights-of-way are limited to overgrown guardrail maintenance, noxious weed management and direct stump applications for "stump-sprouting" tree species.

**Table 8 -- Number of herbicide applications by treatment type**

Treatment Type Activity	Number Surveyed			Number Treated			Total in System			% Surveyed			% Treated		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Guardrails	389	--	--	345	--	--	1690*	--	--	23%	--	--	20%	--	--
Noxious Weed Sites	--	--	--	5	--	--	1453	--	--	--	--	--	0.3%	--	--
Stump Treatments	--	--	--	10	--	--	--	--	--	--	--	--	--	--	--

*\*variations exist in annual totals based on existing infrastructure changes/updates to County databases and splitting guardrails associated with No Spray Areas*

Guardrail herbicide applications are performed on rails which meet certain criteria when surveyed prior to application. They will fall into one of three ranked categories: treated high, treated medium or untreated guardrails. A high or medium vegetation ranking describes conditions behind and adjacent to the guardrail which exhibits aggressive or weedy vegetation that is either overgrowing the rail or encroaching within three to four feet of the rail feature. These two classifications receive an herbicide application. Those marked as untreated exhibit low growing, non-aggressive or native vegetation, or fall within a right-of-way enrolled in the No Spray Area Program and receives no herbicide application.

The decision to utilize herbicides within the IVMP is guided by numerous factors and considered only one tool in the toolbox of Lane County's vegetation management approach. Although a

small part of the overall vegetation program, herbicide use is the most regulated portion and deserves the most transparency regarding accessible information and resulting management prescriptions. Decision matrixes for each treatment type can be found within the Lane County Rights-of-Way Management Prescription Plan (2018) as a way to assist in furthering these transparency efforts. Lane County will continue to present accessible and accurate information in the hopes of providing insight on our vegetation management processes from planning and implementation through monitoring and review.

## VIII. Program Constraints

Lane County Road Maintenance Division has experienced adverse impacts as a result of the pandemic and Holiday Farm Fire events, including adapting to evolving safety guidelines and the reprioritization of duties to assist where county resources were needed most. Staff hiring and retention issues have continued to hamper the IVMP over the past three years. As a result, annual herbicide guardrail maintenance and noxious weed control efforts were reprioritized, shutting down the herbicide program completely. No herbicide applications were made again in 2022. We have seen marked improvements over the past six months, but have been unable to overcome logistical constraints associated with specific program requirements, most likely keeping us from reinitiating the program again in 2023.

Additional constraints associated with specific program requirements have resulted in inefficiencies and ineffectiveness in combating noxious weeds at a countywide scale. Noxious weed control was the underlying issue for initiation of the Vegetation Task Force and in establishing an adaptively managed integrated vegetation program. The adaptive management approach promotes flexibility in program responses to uncertainties and inefficiencies in program processes and outcomes through monitoring and assessment. We are finding specific program requirements written into Lane Code are hampering our ability to achieve effective noxious weed control. Lane County maintenance operations tend to be complaint driven and reactive in nature and scheduled operations can change from day to day. Noxious weed control falls to the lowest rung when prioritized against routine vegetation maintenance operations as all licensed applicators hold other duties.

Program requirements regarding placing signs with seven day advanced notice on all roads scheduled for herbicide guardrail applications is currently our biggest hurdle. Guardrail application sites are determined based on the following year's construction schedule as preparatory work and encompasses numerous miles of rural roadways. The logistics associated with sign placement on a roadway system currently acts as an obstacle to effective noxious weed control when utilizing individual species best management practices (BMPs).

Constraints associated with this task include

- Costs/hours associated with planning sign locations to encompass all sites, placing signs roadside seven days ahead of treatments and again for removal of signs three days after treatment

- the 48" orange road signs are stolen or vandalized each year
- Signs remain on location until an application can be made, sometimes several weeks after placement due to changing weather patterns, shifting priorities and workloads
- Signs trigger calls by angry constituents believing they can halt the spray program and any scheduled treatments
- Road sign requirements restrict the flexibility needed to plan for control of state listed county noxious weed sites as treatments must account for timing of varying species treatment windows, site locations occurring throughout the county, changing weather conditions and routine vegetation maintenance needs

Lane County Road Maintenance Division anticipates future discussions with the Board of County Commissioners on alternatives to the placement of roadside signs for advance notice requirements of the IVMP. By continuing to provide advance notices on the IVM website, applications could be scheduled monthly by road name based on individual species control BMPs. Increased flexibility in timing herbicide applications based on workloads and appropriate weather conditions would allow 'drive by' treatments at preplanned sites when applicators are in the vicinity. On-site post treatment notices and continued use of blue dye will remain constants of the program. This method would increase the county's ability to control further spread of established weed populations by more readily focusing on outlier locations of established infestations or in preventing new ones.

## **IX. Report Availability**

Copies of this report are available at the Lane County Department of Public Works offices at 3040 N. Delta Highway, Eugene, Oregon, 97408. This report is also available from the Lane County website: <http://www.lanecountyor.gov/vegetation>